Space Weather Forecast

Issued on Tuesday, 25 October 2022 at 01:23 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of R1 Radio blackouts. G1/Minor Storms possible on 28 October.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity has been Low, with two Common-class flares from a developing sunspot region in the southwest quadrant. There are two further regions, a weakly developing group in the southeast quadrant, and a returning, but currently benign region, in the northeast. No Earth-directed CME's have been observed in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind has been elevated for much of the last 24 hours, but has recently declined to slightly elevated levels. Total magnetic field strength has been predominantly weak, with the north-south component varying weakly. Geomagnetic activity was generally Quiet to Unsettled.

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is forecast to be mainly Low or Very Low with a chance of Moderate-class flares.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs have been observed. The current fast wind is expected to average around 500km/s through the first part of 25 October, but then slowly decline to close to background values. An increase is then expected on 28 October as the Earth connects with a further fast wind. Geomagnetic activity may start with an isolated risk of Active or G1/Minor Storms, then become mainly Quiet with isolated Unsettled intervals. There is then a further chance of Active or G1/Minor Storm intervals on 28 October as the Earth connects with the second fast solar wind.

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) is forecast to persist at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Met Office

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	1	1	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	20	20	30	30
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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